



SOLID-STATE 75-OHM

BROAD-BAND UHF PREAMPLIFIER

MODEL UPC-105

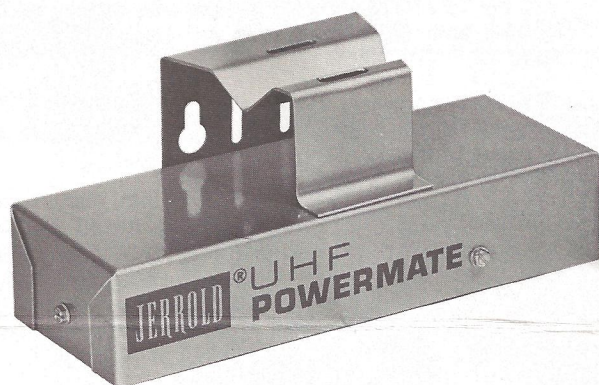


Fig. 1. Model UPC
Preamplifier

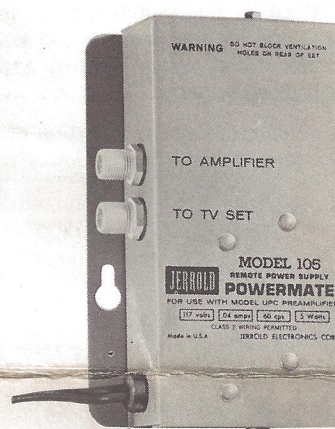


Fig. 2. Model 105
Remote Power Supply

DESCRIPTION

Jerrold Model UPC-105 consists of an antenna-mounting, high-gain, broadband preamplifier covering a range of 470 to 890 mc, and a remote power supply Model 105. The equipment is designed for use in deep-fringe areas to drive indoor converters, tuners, or receivers, eliminating down-lead losses and improving the signal-to-noise ratio in the reception system.

The preamplifier employs two transistors in a common-base cascade circuit designed for optimum noise figure and high output capability. Dual input circuitry permits use of coaxial cable for 75-ohm antennas, or 300-ohm lines for 300-ohm antennas. Output impedance is 75 ohms for coaxial cable. A built-in rectifier circuit and r-c filter rectifies the a-c voltage received from the remote power supply over the same coaxial cable that transports the r-f signal. The preamplifier is equipped with a universal mounting bracket suitable for boom-mounting or mast-mounting.

The remote power supply has 75-ohm input and output fittings and consumes 5 watts at 40 milliamperes and 117 vac. Two key slots permit mounting the power supply anywhere on a flat surface near a 117 vac outlet.

SPECIFICATIONS

PRE-AMPLIFIER

FREQ. RANGE	470 to 890 mc (ch. 14 to 83)
GAIN	14 db average, 10 db minimum
FLATNESS	4 db max., across any band 100 mc wide
MAX. RECOMMENDED INPUT LEVEL	7,500 uv/ch. for 2 channels, at 75 Ω input impedance; 15,000 uv/ch. for 2 channels, at 300 Ω input impedance
DISTORTION	0.5% (-46 db) cross-modulation at max. input
MAX. NOISE FIGURE	11 db at 470 mc (ch. 14) 12 db at 890 mc (ch. 83)
INPUT IMPEDANCE	Dual circuit: 75 ohms, 300 ohms
OUTPUT IMPEDANCE	75 ohms
INTERNAL OPERATING VOLTAGE	15 vdc

POWER SUPPLY

INPUT	117 vac 60 cps
OUTPUT	20 vac nominal
CONSUMPTION	5 watts at 40 ma
RF INPUT AND OUTPUT IMPEDANCE	75 ohms

INSTALLATION

ACCESSORIES SHIPPED WITH EQUIPMENT

- 1 Strap and Clamp Assembly
- 1 Thumb Screw #10-32 x 1½, SS
- 2 Wood Screws #6 x ½, RHS
- 2 Wood Screws #8 x ¾, RHS
- 4 F-59A connectors
- 2 protective boots.

MATERIALS AND TOOLS REQUIRED

1. Sufficient coaxial cable or 300-ohm lead to interconnect antenna and preamplifier, and sufficient coaxial cable to interconnect preamplifier, power supply, and convertor or splitting network or tv set.
2. Tools for cable preparation and installation of connectors as described in Jerrold instruction book 435-344.
3. Silicone type grease for weatherproofing outdoor connections.

INSTALLATION PROCEDURE

1. For a 300-ohm antenna, use the preamplifier as shipped.

IMPORTANT!

For use with a 75-ohm antenna, remove the amplifier chassis from the housing by loosening the 3 slotted hex-head screws; then cut off transformer T1 as shown in fig. 3. Replace chassis into housing and fasten the 3 screws.

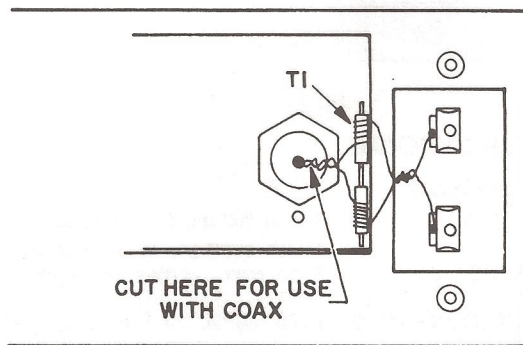


Fig. 3. Preparation of Model UPC for use with 75Ω coax input. Internal view of chassis.

2. Mount the preamplifier on the antenna boom or mast as close to the antenna terminals as practical; use the strap and clamp assembly and the thumb screw shipped with the preamplifier.
3. For a 300-ohm antenna: prepare a short piece of 300-ohm line; connect one end to the antenna terminals, then

form a drip loop and connect the other end to the twin-terminals on the preamplifier. Either the "strip" or "no-strip" method may be employed. Cover both connections with weatherproofing compound.

4. For a 75-ohm antenna: prepare a short piece of RG-59/U cable and install on one end one of the protective boots and one of the F-59A connectors shipped with the unit; on the other end install the protective boot and coaxial cable connector available from the antenna accessories. Grease the connectors and, forming a drip loop, connect the coaxial cable to the terminal of the u.h.f. antenna and the TO ANTENNA fitting on the preamplifier; wrench-tighten both cable connectors not more than 1/6 of a turn.

Fill both protective boots with weatherproofing compound and slide the boots over their respective connections as far as they will go.

5. Prepare one end of the RG-59/U down lead, slide a protective boot onto the cable and install an F-59A connector. Connect this end to the TO POWER SUPPLY fitting on the preamplifier and wrench-tighten the connector not more than 1/6 of a turn. Then fill the boot with weatherproofing compound and cover the connection completely (see fig. 4—bottom view of preamp).
6. Observing standard practice for installation of coaxial cables, run the down-lead to the location chosen for the power supply.
7. Mount the power supply with 2 woodscrews supplied.

CAUTION: When mounting the Model 105 at the rear of a receiver, do not block ventilation holes!

8. Install an F-59A connector on the end of the down-lead and connect to the TO AMPLIFIER fitting on the power supply; wrench-tighten the connector not more than 1/6 of a turn.
9. Prepare a piece of coaxial cable for the run to the converter, splitter, or u.h.f. receiver*; install an F-59A connector at each end of the cable.
10. Connect one end to the TO TV SET fitting on Model 105 power supply; connect the other end to the equipment to be fed. Wrench-tighten the connectors not more than 1/6 of a turn.
11. Plug the line cord of Model 105 power supply into a 117 vac outlet.

The equipment is now operational.

*Where a receiver or tuner with 300-ohm antenna input terminals is used, a Jerrold Model MTU-372 matching transformer must be inserted between the cable from the power supply and the set.

REPLACEMENT PARTS LIST

MODEL UPC		Ref. Dwg. No.: C861-656A		
ITEM	SCHEMATIC DESIGNATION	QTY.	DESCRIPTION	JERROLD PART NO.
CAPACITORS				
1	C2	1	3.3 pf, 10%, 500 V	122-010
2	C3	1	0.91 pf, 10%, 500 V	122-029
3	C4, 6	2	47 pf, 20%, 500 V	C120-105
4	C5	1	2.2 pf, 10%, 500 V	122-008
5	C7	1	2.4 pf, 10%, 500 V	122-032
6	C10, 11, 14, 15	4	68 pf, 10%, 500 V	122-023
7	C12	1	1000 pf, 500 V, GMV, feed-thru	129-205
8	C13, 16	2	250 uf, 16 vdc, electrolytic	127-059
DIODE				
9	CR1	1	CER68A, silicone rectifier 150 mv, 70 vac, 100 v-piv	137-718
RESISTORS				
10	R1, 2	2	12 k, 10%, 1/4 w	112-928

MODEL UPC		Ref. Dwg. No.: C861-656A		
ITEM	SCHEMATIC DESIGNATION	QTY.	DESCRIPTION	JERROLD PART NO.
11	R3, 10	2	1.5 k, 10%, 1/2 w	112-383
12	R4, 6	2	2.7 k, 10%, 1/4 w	112-925
13	R5	1	1.1 k, 5%, 1/4 w	112-927
14	R7	1	470 Ω , 10%, 1/2 w	112-320
15	R9	1	510 Ω , 5% 1/4 w	112-996
TRANSISTORS				
16	Q1, 2	2	A1490, GE, PNP	130-128
MODEL 105		Ref. Dwg. No.: C861-653-0		
1	C1, 2	2	Capacitor, 1000 pf, GMV	123-115
2	C3	1	Capacitor, 0.22 pf, 10%, 500 V	122-042
3	R1	1	Resistor, 1.0 Megohm, 20%, 1/2 w	112-743
4	R2	1	Resistor, 1.5 k, 10%, 1/2 w	112-383
5	T1	1	Transformer, line	B141-203
6	P1	1	Cord Set	659-131

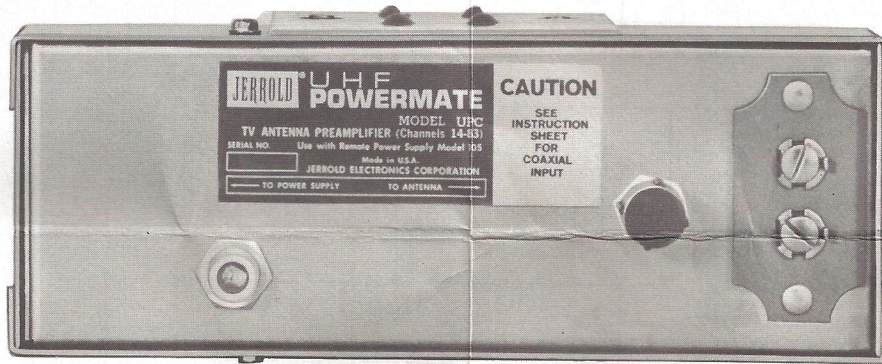
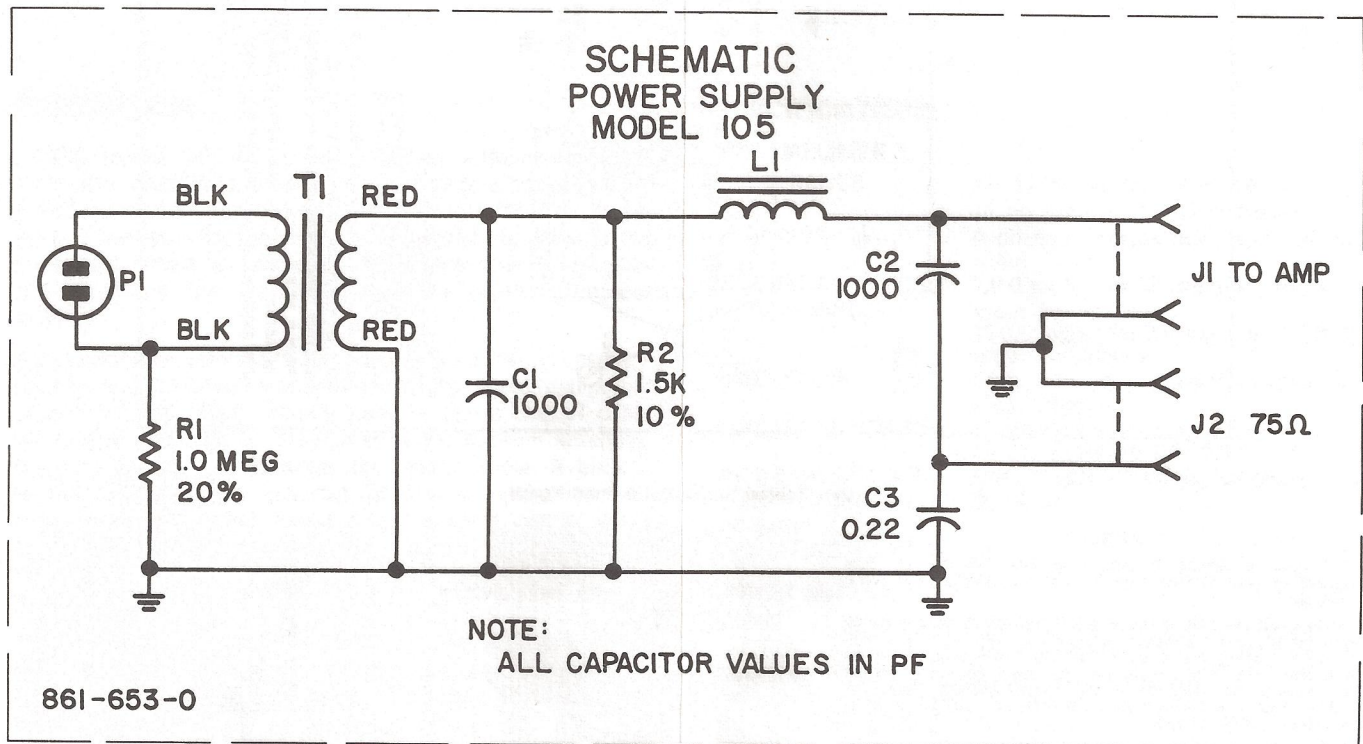


Fig. 4. Model UPC Bottom View.



SCHEMATIC

UHF POWERMATE AMPLIFIER MODEL UPC

NOTES:

1. UNLESS OTHERWISE SPECIFIED;
A. ALL CAPACITOR VALUES GIVEN IN PF
B. ALL RESISTOR VALUES GIVEN IN OHMS, 10%, 1/4 W.
2. VOLTAGES TAKEN WITH A 20,000Ω/V METER
3. ALL VOLTAGES ARE MEASURED TO GROUND.
VOLTAGE DROP ACROSS R3 & R5 ARE MEASURED FROM ⚡ TO *
4. R9 FACTORY SELECTED. NOT USED IN ALL UNITS.
5. FOR ASSEMBLY SEE DWG. NO. C818-164.

NOTES:

1. UNLESS OTHERWISE SPECIFIED,
A. ALL CAPACITOR VALUES GIVEN IN PF.
B. ALL RESISTORS IN OHMS, 10%, 1/4 W.
2. VOLTAGES TAKEN WITH A 20,000 Ω V METER
3. ALL VOLTAGES ARE MEASURED TO GROUND.
VOLTAGE DROP ACROSS R3 & R5 ARE MEASURED
FROM Φ TO Φ .
4. R9 FACTORY SELECTED. NOT USED IN ALL UNITS.
5. FOR ASSEMBLY SEE DWG. NO. C815-164.

D861-656-A

Data Subject to Change Without Notice

WARRANTY

Each unit of Jerrold Equipment is warranted for 90 days against original factory imperfections in material and workmanship.

In the event any unit of equipment should fail in service during this period, pack the complete defective unit carefully, attach a letter stating the reasons the unit was believed to be defective, and return it to our Service Department, Jerrold Electronics Corp., 15th Street and Lehigh Avenue, Phila., Pa. 19132, prepaying transportation charges. It shall be repaired or replaced at no charge.

Such service or repairs as may be necessary as the result of abuse or accident are not included in the warranty. In the event of any service breakdowns after the warranty period, this unit may be returned for repairs at a nominal charge.

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DISTRIBUTOR SALES DIVISION

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ELECTRONICS

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